MULTIMEDIA UNIVERSITY®

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2016/2017

HPT2021 INTRODUCTION TO HUMAN PATHOLOGY

(All Sections / Groups)

31 MAY 2017
2.30 p.m. - 4.30 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **6** pages including cover page with **5** questions only.
2. Answer **ALL** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please write all your answers in the space provided in this question paper.

QUESTION 1

(a) Give FOUR clinical examples of pathologic atrophy. **[2 marks]**

(b) Mr. Young has been smoking one pack of cigarettes per day for 20 years. Describe the possible cellular changes that could have occurred in his bronchial epithelium. How does that make him more prone to upper respiratory infections? **[2 marks]**

(c) Various outcomes can arise from the actions of different injurious agents on different cells/tissues. Name FOUR factors that influence the consequences of cellular injury. **[2 marks]**

(d) Cyanide is considered to be toxic because it binds to cytochrome c oxidase (the fourth complex in the electron transport chain) and hinders cytochrome c oxidase from its oxygen transport activity. This blocks the further passage of electrons throughout the chain, halting ATP production. What would happen to the cell when ATP production is halted? **[4 marks]**

Continued...

QUESTION 2

(a) Traveller's thrombosis, or economy-class syndrome, can lead to fatal complications. How does it occur? Who are at risk? If you belong to the high-risk group for this syndrome and you are having a long-haul flight in schedule, what would you do to reduce your chance of developing the syndrome? **[6 marks]**

(b) List TWO types of embolism. Provide brief description to each of the embolism that you have listed. **[4 marks]**

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QUESTION 3

(a) Explain injury by therapeutic agents and give TWO examples. **[2 marks]**

(b) List THREE types of physical injuries and briefly explain your answer. **[3 marks]**

(c) What are the possible causes of malnutrition? Name TWO and provide brief explanation. **[2 marks]**

(d) Briefly describe THREE disorders due to nutritional deficiency. **[3 marks]**

Continued...

QUESTION 4

(a) Give THREE differences between benign and malignant tumors. **[3 marks]**

(b) Cancer can be caused by bacterial and viral infections. Give TWO examples of the cancers and their agents. **[2 marks]**

(c) Comment on this statement, "The majority of cancer cases are caused by inherited genetic mutations". **[1 mark]**

(d) How do active and passive immunotherapy work in cancer treatment? **[2 marks]**

(e) A pair of identical twin brothers has been raised in different foster families since they were born. One of them was diagnosed with lung cancer at his age of 35. In your opinion, will the other brother face the same medical condition around the same age as well? Provide the reason to support your opinion.

[2 marks]

Continued...

QUESTION 5

(a) Explain why HIV's attack on helper CD4 T lymphocytes devastates the entire immune system. **[2 marks]**

(b) Define the following immune disorders:

i. Hypersensitivity
ii. Autoimmunity
iii. Immunodeficiency **[3 marks]**

(c) Explain why some mitochondrial diseases caused by mutation in the mitochondrial DNA do not follow Mendelian inheritance? Name one potential treatment for mitochondrial disease. **[2 marks]**

(d) Give TWO differences between monogenic and polygenic diseases. **[2 marks]**

(e) Suppose you suspect a newborn baby has Down syndrome, what molecular technique would you use for diagnosis? Explain your answer briefly. **[1 mark]**

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